

Source: [Legal](#) > [Area of Law - By Topic](#) > [Patent Law](#) > [Patents](#) > [U.S. Patents](#) > [Utility Patents](#) ⓘ

Terms: **patno=6021303** ([Edit Search](#))

---

*309922 (00) 6021303 February 1, 2000*

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT  
**6021303**

♦ [GET 1st DRAWING SHEET OF 10](#)

[Access PDF of Official Patent.](#) (Note: Cost incurred in a later step)

The Adobe Acrobat Reader must be installed on your computer to access Official Patent text.  
If you do not have this FREE reader, you can download it now from [www.adobe.com](http://www.adobe.com).

[Link to Claims Section](#)

February 1, 2000

Image heating device and image forming device using the same  
**REISSUE:** February 1, 2002 - Reissue Application filed Ex. Gp.: 2852; Re. S.N. 10/006,035  
(O.G. October 8, 2002)

**INVENTOR:** Terada, Hiroshi, Ikoma, JP; Toyoda, Akinori, Katano, JP; Urata, Yoshihito, Katano, JP; Yamamoto, Hajime, Ikoma, JP; Genji, Nobuo, Osakasayama, JP; Ishimaru, Naoaki, Minoo, JP; Nakatsugawa, Tatsuo, Utsunomiya, JP; Naito, Masakazu, Shioya-gun, JP

**APPL-NO:** 309922 (00)

**FILED-DATE:** May 11, 1999

**GRANTED-DATE:** February 1, 2000

**PRIORITY:** May 15, 1998 - 10-132984, Japan (JP); July 17, 1998 - 10-203005, Japan (JP)

**ASSIGNEE-AT-ISSUE:** Matsushita Electric Industrial Co., Ltd., Osaka, JP

**ASSIGNEE-AFTER-ISSUE:** August 4, 1999 - ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)., MATSUSHITA GRAPHIC COMMUNICATION SYSTEMS, INC. 2-3-8, SHIMOMEGURO, MEGURO-KU TOKYO 153-8687 JAPAN, Reel and Frame Number: 010139/0355

**LEGAL-REP:** Merchant & Gould, P.C.

**PUB-TYPE:** February 1, 2000 - Utility Patent having no previously published pre-grant publication (A)

**PUB-COUNTRY:** United States (US)

**US-MAIN-CL:** 399#328

**US-ADDL-CL:** 399#329, 399#330, 399#335

**CL:** 399

**SEARCH-FLD:** 399#320, 399#328, 399#329, 399#330, 399#333, 399#335, 399#338

**LexisNexis™ The Total Research System** [Practice Area Pages](#) [Change Client](#) [Options](#) [Feedback](#) [Sign Off](#) [Help](#)

**Search** [Search Advisor](#) [Get a Document](#) [Shepard's® - Check a Citation](#) [ECLIPSE™](#) [History](#)

**Sources** [Guided Search Forms](#) [Command Searching](#)

[Legal](#) > [Area of Law - By Topic](#) > [Patent Law](#) > [Patents](#) > [U.S. Patents](#) > [Utility Patents](#) ⓘ

**Enter Search Terms**

☒ **Terms and Connectors** ☐ **Natural Language**

patno=6021303

Use connectors to show relation of terms (cat or feline, jane w/3 doe) [more...](#)

☒ **Suggest Words and Concepts for Entered Terms**

☒ **Restrict Search Using Document Segments**

Optional: Restrict by Date

☒ **No Date Restrictions** ☐ From  To

---

**Search** | [Search Advisor](#) | [Get a Document](#) | [Shepard's® - Check a Citation](#)  
[Eclipse™](#) | [History](#) | [Delivery Manager](#) | [Practice Area Pages](#) | [Change Client](#) | [Options](#) | [Feedback](#) | [Signoff](#) | [Help](#)  
[About LexisNexis](#) | [Terms and Conditions](#)

---

Copyright © 2003 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

Selected file: PLUSPAT

PLUSPAT - (c) Questel-Orbit, All Rights Reserved.

Comprehensive Worldwide Patents database

New Patent Citation Commands & FAM Citation Report - see INFO PATCITE

Last update of file: 2003/04/16 (YYYY/MM/DD) 2003-15/UP (basic update)

Search statement 1

?us6021303/pn

\*\* SS 1: Results 1

Search statement 2

?prt fu legalall max

1/1 PLUSPAT - (C) QUESTEL-ORBIT

PN - US6021303 A 20000201 [US6021303]

TI - (A) Image heating device and image forming device using the same

PA - (A) MATSUSHITA ELECTRIC IND CO LTD (JP)

PA0 - Matsushita Electric Industrial Company, Ltd., Osaka [JP]

IN - (A) TERADA HIROSHI (JP); TOYODA AKINORI (JP); URATA YOSHIHITO (JP);

YAMAMOTO HAJIME (JP); GENJI NOBUO (JP); ISHIMARU NAOAKI (JP);

NAKATSUGAWA TATSUO (JP); NAITO MASAKAZU (JP)

AP - US30992299 19990511 [1999US-0309922]

PR - JP13298498 19980515 [1998JP-0132984]

- JP20300598 19980717 [1998JP-0203005]

IC - (A) G03G-015/20

EC - G03G-015/20H2D

- G03G-015/20H2P3

ICO - S03G-215/20A3

PCL - ORIGINAL (O) : 399328000; CROSS-REFERENCE (X) : 399329000 399330000  
399335000

DT - Corresponding document

CT - US4256945; US5568240; US5713069; US5752148; US5765086; US5768673;

US5778293; US5822669; US5862445; US5881349; US5939337; US5940655

STG - (A) United States patent

AB - An image heating device comprises a cylindrical heating roller with a Curie temperature of 210 (degree) C., a magnetization coil for magnetizing the heating roller with an alternating magnetic field, which is arranged inside the heating roller, and a nip portion for heating a recording material that carries a toner image with heat from the heating roller, while the recording material is being conveyed along said nip portion. The ratio between the amount of heat generated in said heat-generating member at Curie temperature or higher to the amount of heat generated at room temperature in said heat-generating member is not more than 1/2. With this configuration, the heating roller can regulate its own temperature to stabilize at a temperature that is suitable for fixing, and the problems of partial overheating or underheating, unstable heat generation, or damage of the device can be eliminated.

1/1 LGST - (C) LEGSTAT

PN - US 6021303 [US6021303]

AP - US 309922/99 19990511 [1999US-0309922]

DT - US-P

ACT - 19990511 US/AE-A

4/17/03

US 6,021,303

10/066035

APPLICATION DATA (PATENT)  
{US 309922/99 19990511 [1999US-0309922]}  
- 20000201 US/A  
PATENT  
- 20021008 US/RF  
REISSUE APPLICATION FILED  
20020201  
UP - 2002-42

1/1 CRXX - (C) CLAIMS/RRX  
AN - 3276386  
PN - 6,021,303 A 20000201 [US6021303]  
PA - Matsushita Electric Industrial Co Ltd JP  
PT - E (Electrical)  
ACT - 20020201 REISSUE REQUESTED  
ISSUE DATE OF O.G.: 20021008  
REISSUE REQUEST NUMBER: 10/066035  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2852

Reissue Patent Number:

UP - 2002-41  
UACT- 2002-10-08

Search statement 2

?file inpadoc

Selected file: INPADOC

You are now connected to INPADOC  
Covers 1968/1973 thru weekly updates (2003-14)  
For information on content, ..INFO INPD.

Search statement 1

?fam us6021303/pn

1 Patent Groups  
\*\* SS 1: Results 6

Search statement 2

?famstate nonstop

1/6 INPADOC - (C) INPADOC  
PN - CN 1236121 A 19991124 [CN1236121]  
TI - IMAGE HEATER AND IMAGE FORMING DEVICE USING THE SAME  
IN - TERADA HIROSHI [JP]; YAMAMOTO HAJIME [JP]; TOYODA AKINORI [JP]  
PA - MATSUSHITA ELECTRIC IND CO LTD [JP]  
AP - CN 99106645/99-A 19990517 [1999CN-0106645]  
PR - JP 132984/98-A 19980515 [1998JP-0132984]  
- JP 203005/98-A 19980717 [1998JP-0203005]  
IC - G03G-015/20; G03G-015/02

Stic EIC 2800

Darcy Bates

306-5419

## 2/6 INPADOC - (C) INPADOC

PN - EP 957412 A3 20010627 [EP-957412]  
TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE USING THE SAME  
LA - ENG  
IN - TERADA HIROSHI [JP]; TOYODA AKINORI [JP]; URATA YOSHIHITO [JP];  
YAMAMOTO HAJIME [JP]; GENJI NOBUO [JP]; ISHIMARU NAOAKI [JP]  
PA - MATSUSHITA ELECTRIC IND CO LTD [JP]; MATSUSHITA GRAPHIC [JP]  
AP - EP 99108631/99-A 19990511 [1999EP-0108631]  
PR - JP 132984/98-A 19980515 [1998JP-0132984]  
- JP 203005/98-A 19980717 [1998JP-0203005]  
IC - G03G-015/20  
DS - AT\* BE\* CH\* CY\* DE\* DK\* ES\* FI\* FR\* GB\* GR\* IE\* IT\* LI\* LU\* MC\* NL\*  
PT\* SE\*

## 1/1 LEGALI - (C) LEGSTAT

PN - EP 957412 [EP-957412]  
AP - EP 99108631/99 19990511 [1999EP-0108631]  
DT - EP-P  
ACTE- 19990511 EP/AE-A  
EP-APPLICATION  
{EP 99108631/99 19990511 [1999EP-0108631]}  
- 19991117 EP/AK-A2 [+]  
DESIGNATED CONTRACTING STATES IN AN APPLICATION WITHOUT SEARCH REPORT:  
DE GB  
- 19991117 EP/AX [+]  
EXTENSION OF THE EUROPEAN PATENT TO  
AL;LT;LV;MK;RO;SI  
- 19991117 EP/A2 [+]  
PUBLICATION OF APPLICATION WITHOUT SEARCH REPORT  
- 20010627 EP/AK-A3 [+]  
DESIGNATED CONTRACTING STATES IN A SEARCH REPORT:  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE  
- 20010627 EP/AX [+]  
EXTENSION OF THE EUROPEAN PATENT TO  
AL;LT;LV;MK;RO;SI  
- 20010627 EP/A3 [+]  
SEPARATE PUBLICATION OF THE SEARCH REPORT (ART. 93)  
- 20010905 EP/17P [+]  
REQUEST FOR EXAMINATION FILED  
20010706  
- 20020320 EP/AKX [+]  
PAYMENT OF DESIGNATION FEES  
DE GB  
UP - 2002-12

## 3/6 INPADOC - (C) INPADOC

PN - EP 957412 A2 19991117 [EP-957412]  
TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE USING THE SAME  
LA - ENG  
IN - TERADA HIROSHI [JP]; TOYODA AKINORI [JP]; URATA YOSHIHITO [JP];  
YAMAMOTO HAJIME [JP]; GENJI NOBUO [JP]; ISHIMARU NAOAKI [JP]  
PA - MATSUSHITA ELECTRIC IND CO LTD [JP]; MATSUSHITA GRAPHIC COMMUNIC [JP]  
AP - EP 99108631/99-A 19990511 [1999EP-0108631]  
PR - JP 132984/98-A 19980515 [1998JP-0132984]  
- JP 203005/98-A 19980717 [1998JP-0203005]

4/17/03

US 6,021,303

10/066035

IC - G03G-015/20  
DS - DE\* GB\*

1/1 LEGALI - (C) LEGSTAT

PN - EP 957412 [EP-957412]

AP - EP 99108631/99 19990511 [1999EP-0108631]

DT - EP-P

ACTE- 19990511 EP/AE-A

EP-APPLICATION

{EP 99108631/99 19990511 [1999EP-0108631]}

- 19991117 EP/AK-A2 [+]

DESIGNATED CONTRACTING STATES IN AN APPLICATION WITHOUT SEARCH REPORT:  
DE GB

- 19991117 EP/AX [+]

EXTENSION OF THE EUROPEAN PATENT TO  
AL;LT;LV;MK;RO;SI

- 19991117 EP/A2 [+]

PUBLICATION OF APPLICATION WITHOUT SEARCH REPORT

- 20010627 EP/AK-A3 [+]

DESIGNATED CONTRACTING STATES IN A SEARCH REPORT:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

- 20010627 EP/AX [+]

EXTENSION OF THE EUROPEAN PATENT TO  
AL;LT;LV;MK;RO;SI

- 20010627 EP/A3 [+]

SEPARATE PUBLICATION OF THE SEARCH REPORT (ART. 93)

- 20010905 EP/17P [+]

REQUEST FOR EXAMINATION FILED

20010706

- 20020320 EP/AKX [+]

PAYMENT OF DESIGNATION FEES

DE GB

UP - 2002-12

4/6 INPADOC - (C) INPADOC

PN - JP 2000035724 A2 20000202 [JP2000035724]

TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE

IN - TERADA HIROSHI; TOYODA AKINORI; GANJI NOBUO; ISHIMARU NAOAKI;  
NAKATSUGAWA TATSUO; NAITO MASAKAZU

PA - MATSUSHITA ELECTRIC IND CO LTD; MATSUSHITA GRAPHIC COMMUNIC

AP - JP 203005/98-A 19980717 [1998JP-0203005]

PR - JP 203005/98-A 19980717 [1998JP-0203005]

IC - G03G-015/20; G03G-015/20; H05B-006/14

5/6 INPADOC - (C) INPADOC

PN - JP 11327331 A2 19991126 [JP11327331]

TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE

IN - TERADA HIROSHI; YAMAMOTO HAJIME; URATA YOSHITO; GANJI NOBUO; ISHIMARU  
NAOAKI

PA - MATSUSHITA ELECTRIC IND CO LTD

AP - JP 132984/98-A 19980515 [1998JP-0132984]

PR - JP 132984/98-A 19980515 [1998JP-0132984]

IC - G03G-015/20

6/6 INPADOC - (C) INPADOC

4/17/03

US 6,021,303

10/066035

PN - US 6021303 A 20000201 [US6021303]  
TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE USING THE SAME  
IN - TERADA HIROSHI [JP]; TOYODA AKINORI [JP]; URATA YOSHIHITO [JP];  
YAMAMOTO HAJIME [JP]; GENJI NOBUO [JP]; ISHIMARU NAOAKI [JP];  
NAKATSUGAWA TATSUO [JP]; NAITO MASAKAZU [JP]  
PA - MATSUSHITA ELECTRIC IND CO LTD [JP]  
AP - US 309922/99-A 19990511 [1999US-0309922]  
PR - JP 132984/98-A 19980515 [1998JP-0132984]  
- JP 203005/98-A 19980717 [1998JP-0203005]  
IC - G03G-015/20

1/1 LEGALI - (C) LEGSTAT

PN - US 6021303 [US6021303]

AP - US 309922/99 19990511 [1999US-0309922]

DT - US-P

ACTE- 19990511 US/AE-A

APPLICATION DATA (PATENT)

{US 309922/99 19990511 [1999US-0309922]}

- 20000201 US/A


PATENT


- 20021008 US/RF

REISSUE APPLICATION FILED


20020201

UP - 2002-42

 **LexisNexis™** *The Total Research System* [Practice Area Pages](#) [Change Client](#) [Options](#) [Feedback](#) [Sign Off](#) [Ho](#)

**Search** [Search Advisor ▶](#) [Get a Document ▶](#) [Shepard's® - Check a Citation ▶](#) [ECLIPSE™](#) [History](#) 

**Sources** [Guided Search Forms](#) [Command Searching](#)

[Legal](#) > [Area of Law - By Topic](#) > [Patent Law](#) > [Legal News](#) > [Patent, Trademark & Copyright Periodicals, Combined](#) 

### Enter Search Terms

☒ **Terms and Connectors** ☐ **Natural Language**

6021303 or 6,021,303

**Search**

Use connectors to show relation of terms (cat or feline, jane w/3 doe) [more...](#)

☒ **Suggest Words and Concepts for Entered Terms**

☒ **Restrict Search Using Document Segments**

Optional: Restrict by Date

☒ **No Date Restrictions**

☐

From

To

---

**Search** | [Search Advisor](#) | [Get a Document](#) | [Shepard's® - Check a Citation](#)  
[Eclipse™](#) | [History](#) | [Delivery Manager](#) | [Practice Area Pages](#) | [Change Client](#) | [Options](#) | [Feedback](#) | [Signoff](#) | [Help](#)  
[About LexisNexis](#) | [Terms and Conditions](#)

---

Copyright © 2003 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.



## No Documents Found!

No documents were found for your search (**6021303** or **6,021,303**). Please edit your search and try again. You may want to try one or more of the following:

- Check for spelling errors.
- Remove some search terms.
- Use more common search terms.
- If applicable, look for all dates.

---


**Edit Search**


---

[About LexisNexis](#) | [Terms and Conditions](#)


---

[Copyright ©](#) 2003 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

 **LexisNexis™** *The Total Research System* [Practice Area Pages](#) [Change Client](#) [Options](#) [Feedback](#) [Sign Off](#) [Ho](#)



**Search** [Search Advisor ▶](#) [Get a Document ▶](#) [Shepard's® - Check a Citation ▶](#) [ECLIPSE™](#) [History](#) 

**Sources** [Guided Search Forms](#) [Command Searching](#)

[Legal](#) > [Area of Law - By Topic](#) > [Patent Law](#) > [Multi-Source Groups](#) > **Patent Cases from Federal Courts and Administrative Materials** 

**Enter Search Terms**

☒ **Terms and Connectors** ☐ **Natural Language**


6021303 or 6,021,303   **Search**

Use connectors to show relation of terms (cat or feline, jane w/3 doe) [more...](#)

☒ **Suggest Words and Concepts for Entered Terms**

☒ **Restrict Search Using Document Segments**

Optional: Restrict by Date

☒ **No Date Restrictions**  ☐ From  To

---

**Search** | [Search Advisor](#) | [Get a Document](#) | [Shepard's® - Check a Citation](#)  
[Eclipse™](#) | [History](#) | [Delivery Manager](#) | [Practice Area Pages](#) | [Change Client](#) | [Options](#) | [Feedback](#) | [Signoff](#) | [Help](#)  
[About LexisNexis](#) | [Terms and Conditions](#)

---

Copyright © 2003 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

## No Documents Found!

No documents were found for your search (**6021303** or **6,021,303**). Please edit your search and try again. You may want to try one or more of the following:

- Check for spelling errors.
- Remove some search terms.
- Use more common search terms.
- If applicable, look for all dates.

---

**Edit Search.**

---

[About LexisNexis](#) | [Terms and Conditions](#)

---

[Copyright ©](#) 2003 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

**LexisNexis™ The Total Research System** [Practice Area Pages](#) [Change Client](#) [Options](#) [Feedback](#) [Sign Off](#) [Help](#)

**Search** [Search Advisor](#) [Get a Document](#) [Shepard's® - Check a Citation](#) [ECLIPSE™](#) [History](#) [Help](#)

**Sources** [Guided Search Forms](#) [Command Searching](#)

[News & Business](#) > [News](#) > [News Group File, All](#) [i](#)

**Enter Search Terms**

☒ **Terms and Connectors** ☐ **Natural Language**

Use connectors to show relation of terms (cat or feline, jane w/3 doe) [more...](#)

☒ **Suggest Words and Concepts for Entered Terms**

☒ **Restrict Search Using Document Segments**

Optional: Restrict by Date

☒ **No Date Restrictions** ☐ From  To

---

**Search** | [Search Advisor](#) | [Get a Document](#) | [Shepard's® - Check a Citation](#)  
[Eclipse™](#) | [History](#) | [Delivery Manager](#) | [Practice Area Pages](#) | [Change Client](#) | [Options](#) | [Feedback](#) | [Signoff](#) | [Help](#)  
[About LexisNexis](#) | [Terms and Conditions](#)

---

Copyright © 2003 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

## No Documents Found!

No documents were found for your search (**6021303** or **6,021,303**). Please edit your search and try again. You may want to try one or more of the following:

- Check for spelling errors.
- Remove some search terms.
- Use more common search terms.
- If applicable, look for all dates.

---

**Edit Search**

---

[About LexisNexis](#) | [Terms and Conditions](#)

---

[Copyright ©](#) 2003 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.



**EIC 2800**  
Crystal Plaza 4 - 9C18



Prior Art searching  
Document Delivery NPL Foreign Patents

Darcy Bates  
Technical Information Specialist  
703-306-5419

**STI**  
Scientific & Tech  
Information Center

**4/17/03**

**To: SANDRA BRASE**

**Re: 10/066,035 US 6,021,303**

CP4-9B06

**Attached are search results.**

**No U. S. litigation was found in searches of  
Lexis-Nexis and Questel-Orbit databases.**

**If more searching or explanation is needed, please  
let me know.**

**Thanks,  
Darcy Bates  
STIC-EIC2800  
306-5419  
CP4-9C 18**